1.0 Overview of Air Quality Requirements in Arizona

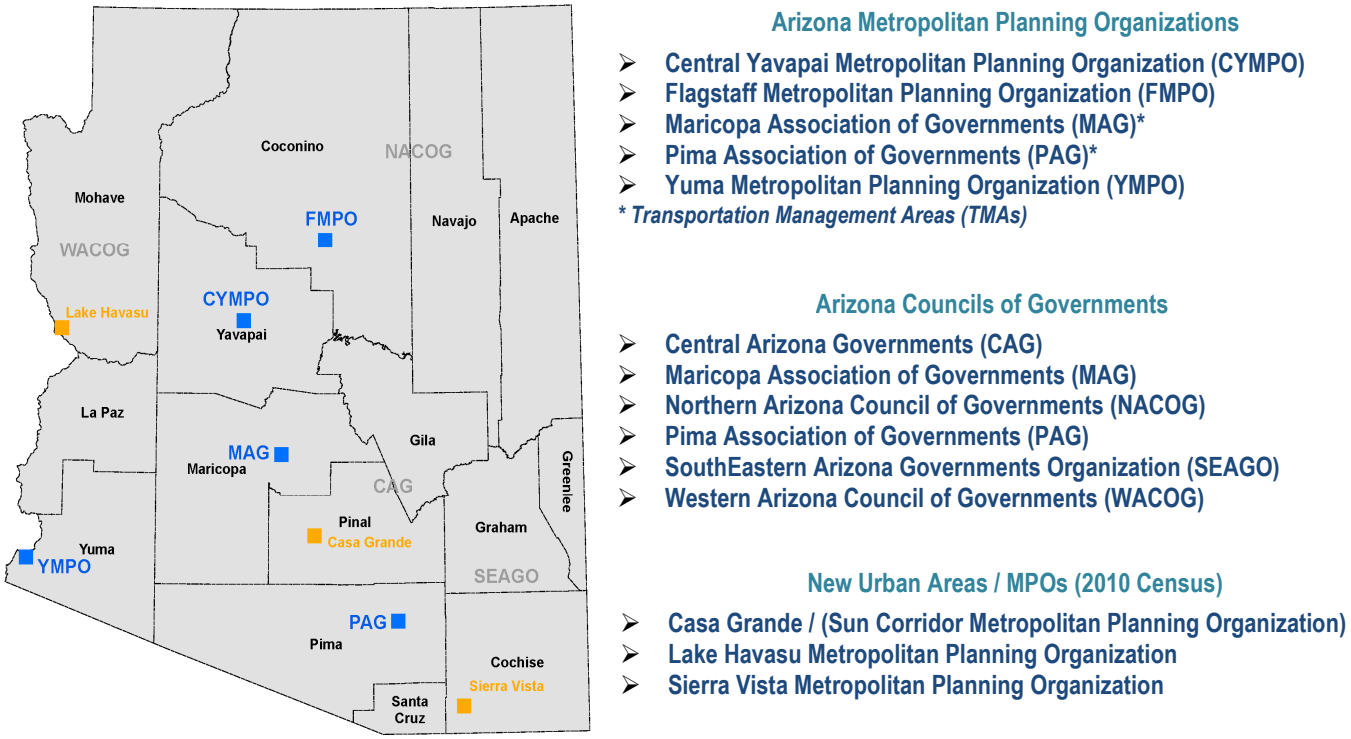
1.1 Introduction

The objective of this document is to provide an overview of the transportation-related air quality requirements in Arizona. This represents a summary of all nonattainment, maintenance and clean data areas in the state, including what each status means for transportation, and the associated requirements for developing State Implementation Plans (SIPs), and successfully demonstrating transportation conformity of transportation plans, programs and projects.

1.2 Arizona Geography

There are six councils of governments (COGs), five metropolitan planning organizations (MPOs), with populations greater than 50,000, and two Transportation Management Areas (TMAs), as illustrated in Figure 1-1, within the State of Arizona. The MPOs in the urban areas are also the regional agencies for transportation planning. In addition, MAG and PAG have been certified as TMAs (populations greater than 200,000) and, as a result, have greater requirements for congestion management, project selection and certification. In the rural areas of Arizona, the COGs perform planning services and direct service functions, such as operating the Area Agency on Aging, the Head Start programs and employment programs.

Figure 1-1: Arizona Metropolitan Planning Areas and Councils of Governments



Source: Maricopa Association of Governments, http://www.azmag.gov/archive/AZ-COGs/Arizona_MPOs/pg_azMPOs.asp

1.3 National Ambient Air Quality Standards

The Clean Air Act Amendments of 1990 (CAAA) require the United States Environmental Protection Agency (EPA) to set National Ambient Air Quality Standards (NAAQS) for six "criteria" pollutants. EPA regulates these pollutants (carbon monoxide, lead, nitrogen dioxide, ozone, particle pollution, and sulfur dioxide) by developing human health-based (primary) and / or environmentally-based (secondary) criteria for allowable levels or

concentrations of the pollutants in the ambient air. While EPA sets standards and regulates the emissions of all six pollutants, only four of the six, outlined in Table 1-1, are relevant with respect to transportation conformity as highlighted in blue. They are carbon monoxide, nitrogen dioxide, ozone and particulate matter. The EPA is charged with designating areas as attainment, maintenance or nonattainment of the NAAQS.

Table 1-1: National Ambient Air Quality Standards for Criteria Pollutants

Pollutant [Final Rule Citation]		Primary / Secondary	Averaging Time	Level (Concentration)	Form
Carbon Monoxide (CO) [76 FR 54294, Aug 31, 2011]		Primary	8-Hour	9 ppm	Not to be exceeded more than once per year
		Secondary	1-hour	35 ppm	
Lead [73 FR 66964, Nov 12, 2008]		Primary & Secondary	Rolling 3 month average	.15 µg/m^3	Not to be exceeded
Nitrogen Dioxide [75 FR 6474, Feb 9, 2010] [61 FR 52852, Oct 8, 1996]		Primary	1-Hour	9 ppm	98th percentile, average over 3 years
		Primary & Secondary	Annual	53 ppm	Annual mean
Ozone [73 FR 16436, Mar 27, 2008]		Primary & Secondary	8-Hour	0.075 ppm	Annual fourth-highest daily maximum 8-hr concentration averaged over 3 years
Particle Pollution [78 FR 3086, Jan 15, 2013]	**$PM_{2.5}$**	Primary	Annual[1]	12 µg/m^3	Annual mean, averaged over 3 years
		Secondary	Annual	15 µg/m^3	Annual mean, averaged over 3 years
		Primary & Secondary	24-Hour	35 µg/m^3	98th percentile, averaged over 3 years
	PM_{10}	Primary & Secondary	24-Hour	150 µg/m^3	Not to be exceeded more than once per year on average over 3 years
Sulfur Dioxide [75 FR 35520, Jun 22, 2010] [38 FR 25678, Sept 14, 1973]		Primary	1-Hour	75 ppm	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years
		Secondary	3-Hour	0.5 ppm	Not to be exceeded more than once per year

Source: Environmental Protection Agency, http://www3.epa.gov/ttn/naaqs/criteria.html.

1.3.1 Recent NAAQS Developments

The EPA is required to scientifically review each NAAQS on five-year intervals (42 USC § 7409) and, as a result, the NAAQS and their implementation represent an ever-changing process. Some recent developments are detailed below.

On May 21, 2012 the EPA published two final rules via the Federal Register announcing the designations for the 2008 ozone NAAQS (77 FR 30088) and implementation of the 2008 NAAQS for ozone (77 FR 30160). The rules both became effective on July 20, 2012. The implementation rule established the air quality thresholds that define the classifications assigned to all nonattainment areas for the 2008 ozone NAAQS, which were promulgated in March 2008. It also established December 31 of each relevant calendar year as the attainment date for all nonattainment area classification categories and provided for the revocation of the 1997 ozone NAAQS for transportation conformity purposes to occur one year after the effective date of designations, or July 20, 2013. On

December 23, 2014, the U. S. Court of Appeals for the District of Columbia issued a ruling that vacated EPA's extension of the attainment dates for the 2008 ozone standard (0.075 parts per million). The Court also ruled that EPA should not have revoked the 1997 ozone standard with respect to the transportation conformity requirements. The Environmental Protection Agency evaluated the implications of the court ruling and on March 6, 2015 revoked the 1997 ozone NAAQS and anti-backsliding requirements effective April 6, 2015. On December 17, 2014 the EPA proposed to strengthen the Ozone standard between .065 to .070 parts per million (ppm) for both the primary and secondary ozone standard along with other alternative suggestions, with a public comment period through March 17, 2015, a court order requires announcement of the new Ozone standard October 1, 2015. The EPA published the Final Rule on October 26, 2015, with a revised standard of .070 ppm, the final rule is effective on December 28, 2015.

On January 15, 2013, the EPA published a final rule via the Federal Register (78 FR 3086) strengthening the primary, annual $PM_{2.5}$ NAAQS from 15 micrograms per cubic meter ($\mu g/m^3$) to 12 $\mu g/m^3$. The EPA retained the 24-hour $PM_{2.5}$ standard and the current 24-hour PM_{10} standard. EPA announced its intent to designate areas for the revised $PM_{2.5}$ NAAQS on a 2-year schedule from the signature of the final rule (December 14, 2012). A final rule promulgating the initial area designations was released on December 18, 2014. The final rule was published on January 15, 2015 with the effective date of new designated areas of April 15, 2015. Arizona does not have any new $PM_{2.5}$ NAAQS for the annual standard of 12 $\mu g/m^3$. The EPA provided a tentative schedule for future NAAQS review in **Table 1-1a.**

Table 1-1a

NAAQS Review and Implementation *May 5, 2015*

	PM	Ozone	Lead	NO2 (primary)	SO2 (primary)	NOx/SOx (secondary)	CO
Current NAAQS Review	TBD; Kick-off workshop held Feb 9-11, 2015	NPR Dec 17, 2014 NFR Oct 1, 2015	NPR Jan 5, 2015 NFR TBD	NPR Nov 2016 NFR Aug 2017	NPR Oct 2018 NFR Jul 2019	NPR May 2017 NFR Feb 2018	TBD
NAAQS Level	Dec 14, 2012: REVISED Primary 2.5 annual 12 $\mu g/m^3$ RETAINED 2.5 24-hr 35 $\mu g/m^3$, 15 $\mu g/m^3$ (secondary only) PM10 24-hr 150 $\mu g/m^3$	PROPOSED 65-70 ppb ECP 3/17/15 March 2008: 0.075 ppm 8-hr (1997: 0.08 ppm 8-hr, effectively 0.084 with rounding)	Dec 2014 PROPOSED to retain Oct 2008: 0.15 $\mu g/m^3$ rolling 3-month	Jan 2010: REVISED 100 ppb 1-hr (triggers implementation) RETAINED 53 ppb annual (no triggers)	June 2010: REVISED 75 ppb 1-hr (triggers implementation) REVOKED 140 ppb 24-hr, 30 ppb annual	Mar 20, 2012: RETAINED NO2 0.053 ppm annual & SO2 0.5 ppm 3-hour	Aug 2011: RETAINED 35 ppm 1-hr & 9 ppm 8-hr. Primary only; no secondary; co-locate new monitors w/ NO2 near-road monitors
State, Tribe & Territories Recommendations Due	Dec 13, 2013 (Friday)	Oct 1, 2016	1st group Oct 15, 2009 2nd group Dec 15, 2010	Jan 2011	Jun 3, 2011	Does Not Apply (retained std)	Does Not Apply (retained std)
Designations	Dec 18, 2014 effective April 2015	'08 effective July 20, 2012 '15 signature Oct 1, 2017	1st group effective Dec 31, 2010 2nd group effective Dec 31, 2011	Feb 29, 2012 Redesignations TBD	**1st grp 10/4/13 2nd 7/2/16 3rd 12/31/17 4th 12/31/20**	DNA	DNA
Attainment Demonstration Due **[Infrastructure SIPs*]**	Oct 2016 (impl rule prop early 2015, final TBD) [Dec 14, 2015] [TBD]	'08. 7/15-7/16 '15. 12/20-12/21 [Mar 12, 2011] [Oct 2018]	1st June 30, 2012 (NE LA County) 2nd June 30, 2013 (None in R9) [Oct 15, 2011] [TBD]	DNA to 2012 designations, all areas uncl/att [Jan 22, 2013] [Aug 2020]	Eff date + 18 mo 1st group April 2015 [June 3, 2013] [July 2022]	DNA [DNA] [Feb 2021]	DNA [DNA] [TBD]
Attainment date	'21 Mod '25 Ser	'15-'32, '20-'37	12/2015, 12/2016	DNA	1st – Oct 2018	DNA	DNA

* i-SIP deadlines in brackets: first date is for the last NAAQS issued; second is projected for current NAAQS review.

Disclaimer: Table assembled from multiple sources → Should NOT be relied upon as primary source.

Note: Underlined dates court-ordered or CD, **bolded dates** new.

NAAQS levels – http://www.epa.gov/air/criteria.html

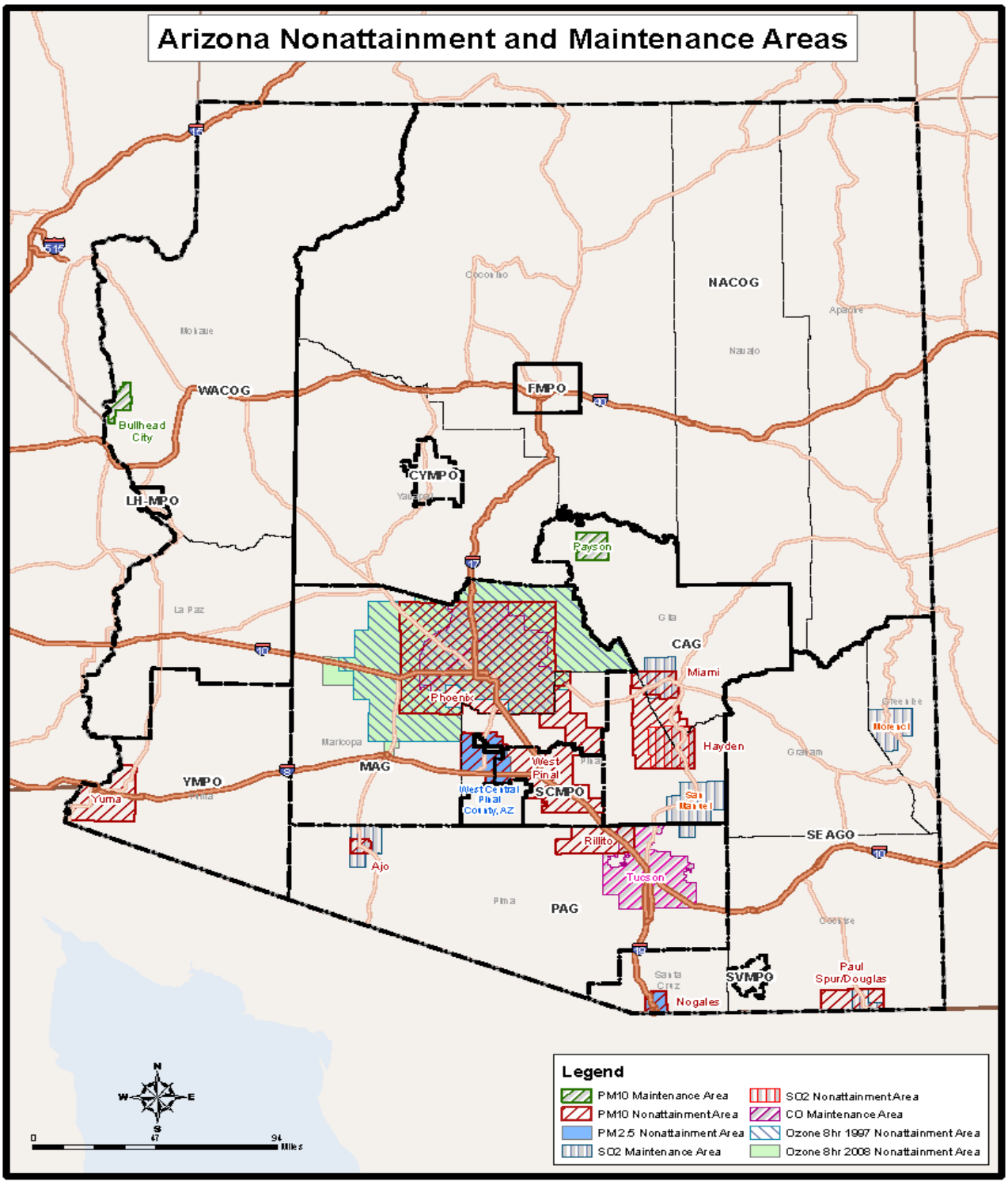
NAAQS info – http://www.epa.gov/ttn/naaqs/

CD–Consent Decree, DNA–Does Not Apply, ECP-End of Comment Period, NAAQS–National Ambient Air Quality Standards, NPR–Notice of Proposed Rulemaking, NFR–Notice of Final Rulemaking, RACM–Reasonably Available Control Measures, RFP–Reasonable Further Progress, TBD–To Be Determined

1.4 Arizona's Nonattainment, Maintenance and Attainment Areas

Based largely on air quality monitoring data, the EPA must designate areas as either meeting (attainment) or not meeting (nonattainment) the NAAQS for each criteria pollutant. As illustrated in **Figure 1-2**, there are currently over 20 nonattainment or maintenance areas throughout the state of Arizona.

Figure 1-2: Arizona Nonattainment and Maintenance Areas



1.5 Arizona's State Implementation Plans (SIPs)

Once an area has been designated as nonattainment for a given NAAQS, the state must create a plan, known as a State Implementation Plan (SIP), to bring the region back into attainment status. Included in the SIPs are emission budgets for various pollutant sectors, including on-road mobile source transportation, that outline the maximum emissions allowed as well as any transportation control measures (TCMs) used to reduce transportation emissions. The state air agency, The Arizona Department of Environmental Quality (ADEQ) develops the state's SIPs and submits them to the EPA for approval. In addition to ADEQ, two MPOs in Arizona, MAG and PAG, have been delegated the responsibility of completing SIP requirements for ozone, carbon monoxide, and particulate pollution (A.R.S. § 49-406) for their respective nonattainment and/or maintenance areas.

1.6 Transportation Conformity

Transportation conformity is required by the CAA (Section 176 (c)) to ensure that federal funding and approval are given to highway and transit projects that are consistent with the area's air quality goals. Demonstrating conformity means verifying that transportation activities will not cause new air quality violations, worsen existing violations, or delay timely attainment of the NAAQS.

Transportation conformity regulations (40 CFR Parts 51 and 93) require conformity determinations for areas that have been designated as nonattainment or maintenance for the following NAAQS: carbon monoxide (CO), ozone, particulate matter ($PM_{2.5}$ and PM_{10}), and nitrogen dioxide (NO_2). Conformity applies to transportation improvement programs (TIPs), long-range transportation plans (plans), and transportation projects that require federal (FHWA or FTA) funding or approval.

Final conformity determinations are made (approved) by FHWA / FTA with EPA consultation. MPO policy boards (MAG, PAG, YMPO) make initial conformity determinations for plans, TIPs and projects. The remaining areas rely on ADOT and ADEQ to make the initial determinations. A formal interagency consultation process is required for developing SIPs, plans, TIPs and making conformity determinations and will be discussed in more detail in Chapter 2.

If an area fails to successfully demonstrate transportation conformity according to schedule, a one-year grace period begins. The grace period provides 12 months for an area to successfully demonstrate conformity before a conformity lapse begins.[1] During a lapse no new non-exempt projects can be amended to the plan or TIP and the use of federal funds is restricted; only the following project types may proceed:

- Projects that are exempt from conformity (§93.126 and 127).
- TCMs in approved SIPs.
- Projects or project phases that are already authorized.

Essential Regional Conformity Components

- Interagency Consultation
- Latest Planning Assumptions and Emissions Model
- Regional Emissions Analysis
- Timely Implementation of Transportation Control Measures
- Fiscal Constraint
- Public Involvement

1.6.1 Regional Conformity

Regional conformity, or the conformity of a plan or TIP, demonstrates that the total emissions from on-road travel on an area's transportation system are consistent with goals for air quality

[1] The one-year conformity lapse grace period does not apply to new nonattainment areas that must make a determination within 12 months of a final designation.

found in the SIP, i.e., they are less than or equal to the motor vehicle emission budgets (§93.118). If an area does not have adequate or approved MVEBs another test, known as the interim emissions test (§93.119), must be performed. The interim emissions tests include either demonstrating that the emissions predicted in the "action" scenario are not greater than the emissions predicted in the "baseline" scenario or by demonstrating that the emissions predicted in the "action" scenario are not greater that the emissions in the baseline year for a given NAAQS.

1.6.2 Frequency

Conformity determinations must be made at least every four years in areas with metropolitan plans or TIPs, but may occur more regularly if the MPOs update their transportation planning documents more frequently or amend them with non-exempt projects. In contrast, conformity determinations in isolated rural nonattainment and maintenance areas are required only when a new non-exempt FHWA/STA project needs funding or approval. A rural area is an area with a population of less than 50,000 and due to its small size, is exempted from FHWA/FTA metropolitan planning requirements related to the development of transportation plans and TIPs. Isolated rural nonattainment and maintenance areas are areas that do not contain or are not part of any metropolitan planning area as designated under the transportation planning regulations. Isolated rural areas do not have federally required plans and do not have projects that are part of the emissions analysis of any MPO's plan or TIP. Projects in such areas must be included in statewide transportation improvement programs (STIPs) prior to federal action to fund or approve such projects. In addition, the following events will trigger the need for a conformity determination:

Conformity Trigger	Grace Period (Within X Months)[2]	Reference
MVEBs approved or found adequate	24 months	§ 93.104 (e)(1-3)
Newly designated nonattainment areas	12 months	§ 93.102(d)
New EPA emissions model	No less than 3 months, no more than 24 months	§ 93.111 (b)(1)

1.6.3 Applicability

All nonattainment areas applicable to transportation conformity must continue to demonstrate regional transportation conformity with the exception of those areas that have an approved Limited Maintenance Plan. Pursuant to the original CO and Ozone guidance, issued in 1995 and 1994, respectively, and the 2001 EPA *Limited Maintenance Plan Option for Moderate PM10 Nonattainment Areas* guidance memo,

Limited Maintenance Plans

Transportation Conformity must be affirmed, but a regional emissions analysis is not required.

> "Emissions budgets in LMP areas may be treated as essentially not constraining for the length of the maintenance period because it is unreasonable to expect that an area satisfying the LMP criteria will experience so much growth during that period of time such that a violation of the PM10 NAAQS would result. While this policy does not exempt an area from the need to affirm conformity, it does allow the area to demonstrate conformity without undertaking certain requirements of these rules. For transportation conformity purposes, EPA would be concluding that emissions in these areas need not be capped for the maintenance period, and, therefore, a regional emissions analysis would not be required."

1.6.4 Project-Level Conformity

In addition to regional conformity determinations, project-level conformity determinations are required in CO, $PM_{2.5}$ and PM_{10} nonattainment and maintenance areas (§93.109 (d)). To demonstrate project-level conformity:

- A project must come from a conforming STIP or MPO plan / TIP.
- The project's design concept and scope must not have changed significantly from that in the STIP or MPO planning documents.
- The analysis must have used the latest planning assumptions and the latest emissions model.
- In $PM_{2.5}$/PM_{10} areas, there must be a demonstration of compliance with any control measures in the SIP.

Additional analysis may be necessary to determine if a project has localized air quality impacts. This localized air analysis is referred to as a "hot-spot" analysis. A hot-spot analysis is defined as an estimation of likely future localized CO, PM10, and/or PM2.5 pollutant concentrations and a comparison of those concentrations to the NAAQS. A hot-spot analysis assesses impacts on a scale smaller than the entire nonattainment or maintenance area, including, for example, congested roadway intersections and highways or transit terminals, and uses an air quality dispersion model to determine the effects of emissions on air quality (§93.101).

All of the areas, with the exception of ozone areas, must continue to demonstrate project-level transportation conformity. Project-level conformity, including micro-scale air quality analysis and modeling, is currently performed by ADOT.

	MPO / COG Area	County (ies)	Pollutants	Both Regional & Project-Level	Project-Level Only
Larger MPOs	MAG	Maricopa	CO, Ozone, PM_{10}, $PM_{2.5}$	X	
	PAG	Pima	CO, PM_{10}	X	
Smaller MPOs / COGs	CAG	Pinal	PM_{10}	X	
	CAG	Gila	PM_{10}		X
	SCMPO	Pinal	$PM_{2.5}$, PM_{10}	X	
	SEAGO	Santa Cruz	$PM_{2.5}$, PM_{10}	X	
	SEAGO	Cochise	PM_{10}	X	
	WACOG	Mohave	PM_{10}		X
	YMPO	Yuma	PM_{10}	X	

1.7 Addressing Project-Level $PM_{2.5}$ and PM_{10} Hotspot Requirements

On March 10, 2006, EPA published a Final Rule (40 Code of Federal Regulations [CFR] 93.116) that establishes transportation conformity criteria and procedures for determining which transportation projects must be analyzed for local air quality impacts in $PM_{2.5}$ and PM_{10} nonattainment and maintenance areas. A quantitative PM hot-spot analysis using EPA's MOVES emission model is required for those projects that are identified as projects of local air quality concern. Quantitative PM hot-spot analyses are not required for other projects. The interagency consultation process plays an important role in evaluating which projects require quantitative hot-spot analyses and determining the methods and procedures for such analyses.

Carbon Monoxide (CO) Hotspot Requirements
This section focuses on the requirements related to PM hotspots. The MAG (Phoenix) and PAG (Tucson) areas are also responsible for addressing CO hotspots.

1.7.1 Determining Projects of Air Quality Concern

Available EPA and FHWA rulemaking and guidance currently does not provide specific thresholds for determining which projects are of air quality concern (e.g. projects that require a quantitative hot-spot analysis); however, examples are provided in the rule preamble and the federal guidance. To assist in the decision-making process, states have established screening procedures to determine projects of air quality concern. These screening procedures require an interagency consultation group (ICG) that may be the same as established to support regional conformity analyses. ADOT will typically be the lead agency for highway-related projects. Other agencies may serve as the lead for transit projects. In either case, ADOT will typically initiate the consultation process and assure that all relevant documents and information are supplied to consultation process participants in a timely manner, and maintaining a written record of the consultation process. ADOT developed, through interagency consultation, a process to determining projects that require a hot-spot analysis using "Project Level PM Quantitative Hot-Spot Analysis - Project of Air Quality Concern Questionnaire". This questionnaire is completed with the project specific details as identified in 40 CFR §93.116 that establishes transportation conformity criteria and procedures for determining which transportation projects must be analyzed for local air quality impacts in particulate matter nonattainment and maintenance areas. Projects that are projects of air quality concern require a quantitative analysis projects that are not projects of air quality concern meet the clean air requirements without further analysis.

<u>Exempt Projects / Projects Not of "Air Quality Concern"</u>

The information below includes sample text for conditions where a $PM_{2.5}$ or PM_{10} hot-spot quantitative analysis is not required: Note that additional projects may need hot-spot analyses in PM_{10} nonattainment and maintenance areas with approved conformity SIPs that are based on the federal PM_{10} hotspot requirements that existed before the March 2006 final rule.

- **Project is Exempt from Hot-Spot Requirements** - For projects located in attainment areas or projects in nonattainment or maintenance $PM_{2.5}$ and/or PM_{10} areas that are considered exempt according to the latest version of Table 2.1 of 40 CFR Part 93.126 and 93.128, a conformity determination or a quantitative $PM_{2.5}$ and/or PM_{10} analysis is not required. Document the county, area, or partial county nonattainment/maintenance designation and include description of the exempt project classification.

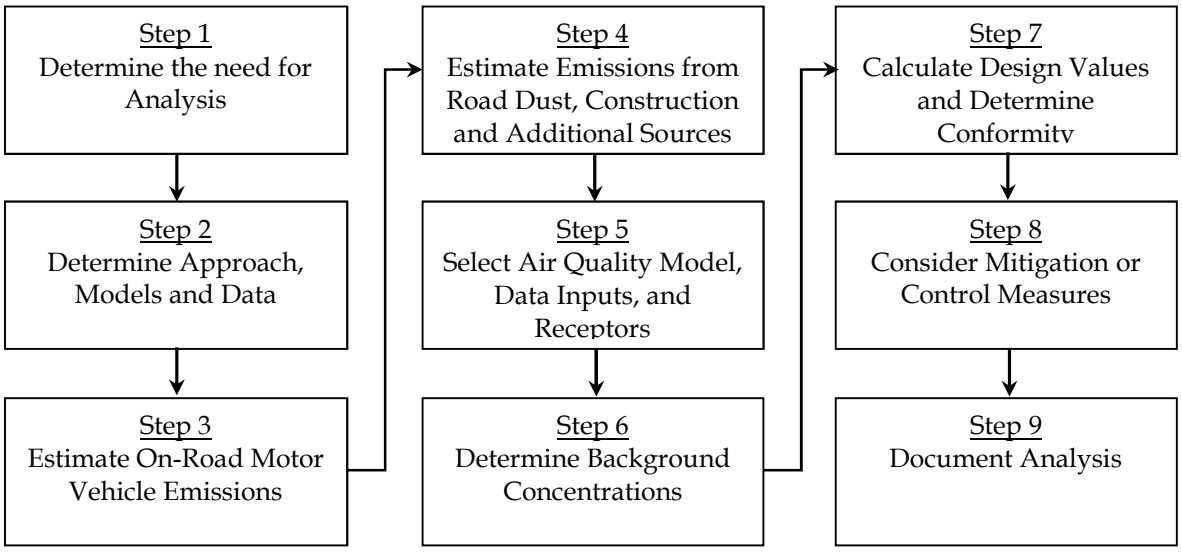
- **Non-Exempt Project that is Not a Project of "Air Quality Concern"** - For projects located in nonattainment or maintenance $PM_{2.5}$ and/or PM_{10} areas that are not considered exempt according to 40 CFR Part 93.126 and 93.128, a determination must be made if the project is considered to be of "air quality concern" under 40 CFR 93.123(b)(1)(i-v) and as further described in the December 2010 EPA guidance, "*Transportation Conformity Guidance for Quantitative Hot-Spot Analysis in $PM_{2.5}$ and PM_{10} Nonattainment and Maintenance Areas*." A documented account of the finding should be included in the NEPA documentation. This would include a listing of the consultation partners, conclusions for the project, and a statement indicating a consensus decision and a date of approval. The text should include specific reasons why the project was not considered to be of "air quality concern" which may include addressing the examples provided in the hotspot rule (http://www.epa.gov/fedrgstr/EPA-AIR/2006/March/Day-10/a2178.pdf).

1.7.2 Key Issues for Conducting a Quantitative Analysis

On December 10, 2010, EPA released guidance for quantifying the local air quality impacts of certain transportation projects for the $PM_{2.5}$ and PM_{10} NAAQS and updated the guidance in November 2013, *Transportation Conformity Guidance for Quantitative Hot-spot Analyses in $PM_{2.5}$ and PM_{10} Nonattainment and Maintenance Areas* (EPA-420-B-13-053). This guidance must be used by state and local agencies to conduct quantitative hot-spot analyses for new or expanded highway or transit projects with significant increases in diesel traffic in PM nonattainment or maintenance areas.

The steps required to complete a quantitative PM hotspot analysis are summarized in Figure 1-3. A hot-spot analysis compares the air quality concentrations modeled for the proposed project to the NAAQS. These air quality concentrations are determined by calculating a design value, which is a statistic that describes a future air quality concentration in the project area that can be compared to a particular NAAQS. It is always necessary to complete emissions and air quality modeling on the "build" scenario and compare the resulting design values to the relevant PM NAAQS. If the "build" scenario does not meet the NAAQS, then a comparison to the "no-build" scenario is conducted.

Figure 1-3: EPA's PM Hotspot Analysis Process



The interagency consultation process is an important component in completing project-level conformity determinations and hot-spot analyses. Per (40 CFR 93.105(c)(1)(i)), interagency consultation must be used to determine key methods and assumptions regarding the analysis. Table 1-3 summarizes the key decisions and associated considerations for the ICG.

Table 1-3: Key ICG Decisions on Quantitative Methods and Data

Topic	Key Decisions/Considerations
Analysis Approach	• Will analysis focus on Build condition only? • Project alternative to model (if more than one)
Study Area	• Location(s) of highest emissions • Consider locations outside project area that may be affected by the project
Analysis Years	• Year of highest emissions • May consider that emission factors are decreasing in future years
Type of PM Emissions Analyzed	• PM mobile source types to include (are there any start or idling emissions?) • Construction emissions (are they < 5 years in duration) • Any non-road sources near the project location • Is road dust considered a significant source? (AP-42)
Emission Models	• MOVES2010b or MOVES2014 • AERMOD or CAL3QHC • Methods for using AERMOD (treat road as volume or area source) • What recent meteorology data is available for each model?
Background Concentrations	• Closest monitor locations • Will more than one monitor be averaged? • Insights of environmental agency on background concentrations • Are forecast concentrations available from chemical transport models?
Traffic Data Source – MOVES Application Methods	• Is a traffic simulation model available? • Source of traffic speeds by time period • How will MOVES be run? (Average speed, Drive schedule, Operating mode distribution)
Receptor Locations	• Sensitive populations near the study area
Other Input Parameters	• Are MOVES inputs consistent with SIP/Conformity? • Recommendations from FHWA hotspot training • Are assumptions the best available?

Documenting Quantitative Hotspot Analyses

When a quantitative PM hot-spot analysis is performed, the NEPA document should summarize the analysis results and reference the stand-alone air quality technical report. The main body of the NEPA document should include a tabular summary of results for each analysis year and alternative under consideration. The technical report should describe the sources of data used in preparing emissions and air quality modeling inputs. This documentation should also describe any critical assumptions that have the potential to affect predicted concentrations. Documentation of PM hot-spot analyses would be included in the project-level conformity determination

Section 3.10 of EPA's *Transportation Conformity Guidance for Quantitative Hot-spot Analyses in $PM_{2.5}$ and PM_{10} Nonattainment and Maintenance Areas* (EPA-420-B-10-040) provides guidelines for preparing a PM hot-spot analysis technical report. These guidelines include:

- A description of the proposed project, including where the project is located, the project's scope (e.g., adding an interchange, widening a highway, expanding a major bus terminal), when the project is expected to be open to traffic, travel activity projected for the analysis year(s), and what part of 40 CFR 93.123(b)(1) applies;
- A description of the analysis year(s) examined and the factors considered in determining the year(s) of peak emissions;
- Emissions modeling, including the emissions model used (e.g., MOVES), modeling inputs and results, and how the project was characterized in terms of links;
- Modeling inputs and results for estimating re-entrained road dust, construction emissions, and any nearby source emissions (if applicable to the pollutant of concern);
- Air quality modeling data, including the air quality model used, modeling inputs and results, and description of the receptors employed in the analysis;
- A description of the assumptions used to determine background concentrations;
- A discussion of any mitigation or control measures that will be implemented, the methods and assumptions used to quantify their expected effects, and associated written commitments;
- A description of how the interagency consultation and public participation requirements in 40 CFR 93.105 were met; and
- A conclusion (in the case of PM this would include how the proposed project meets 40 CFR 93.116 and 93.123 conformity requirements for the $PM_{2.5}$ and/or PM_{10} NAAQS).

The AASHTO Standing Committee of the Environment (SCOE) has recently completed NCHRP 25-25 Task 71 (http://onlinepubs.trb.org/onlinepubs/nchrp/docs/NCHRP25-25(71)_FR.pdf). That study developed a template technical report document for completing project-level analyses. This template may serve as an additional reference when documenting a PM quantitative hotspot analysis.

1.7.3 NEPA Considerations

All federal-aid projects require an evaluation of the environmental impacts on air quality generally for a no-build scenario and various identified alternatives. By their nature, air quality impacts are negligible for projects processed as CE for local CO impacts, if the projects are exempt from conformity requirements PM10 and PM2.5 impacts are also not necessary. Other considerations include air toxics, construction emissions and climate change impacts. Discussions on the affected environment generally summarizes the current air quality conditions and regulatory

background and describes the current air quality condition, analysis methodologies, environmental impacts, conformity determinations (if applicable), cumulative and indirect impacts and any technical reports or appendices.

Documenting MSATs

For all federal-aid projects, a statement regarding the project's potential to contribute Mobile Source Air Toxics (MSAT's) to the surroundings is required. FHWA has developed a list of project types that would not be reasonably expected to contribute to an increase in MSAT concentrations. A list of these project types can be found in 40 CFR 93.126. If a project is in the exempt list and meets the criteria specified then the project sponsor can indicated that the project will have "No Potential For Meaningful MSAT Effects". FHWA provides information on MSAT's on their website for all project types at: http://www.fhwa.dot.gov/environment/air_quality/air_toxics/policy_and_guidance/aqintguidmem.cfm .

Documenting Construction Impacts

Construction emissions would include any direct PM emissions from construction-related dust and exhaust emissions from construction vehicles and equipment. Construction impacts need to be considered during design and construction phases including, examining land-use features adjacent to the proposed project that may be sensitive or notably impacted. Any mitigation measures used to minimize temporary construction emissions should be documented and included in the special provisions of the construction contract. Standard mitigation measures include fugitive dust suppression and complying with all applicable air quality regulations in the project area.

In 2009 ADOT conducted a yearlong study on emissions impacts of widening SR92 in Sierra Vista. One of the goals of this study was to determine the impact of a road construction project on $PM_{2.5}$ emissions. A summary of the emission results from this study is in Table 1-1. While a large portion of $PM_{2.5}$ is generated from exhaust from diesel engines, in the absence of strict controls, fugitive dust still contributes a larger percentage of emissions for a road construction project. This project produced 29.0 kg/day of PM_{10}, 6.0 kg/day of $PM_{2.5}$, and 30.0 kg/day of NO_X; assumptions could be made that similar types of projects would produce similar emissions. In addition to measuring emissions from a typical road construction project, this study looked at existing mitigation controls for $PM_{2.5}$ including retrofitting construction equipment.

Table 1-1: Emissions from SR92 Road Widening Year 2009

Emissions Source	**PM_{10} (kg)**	**$PM_{2.5}$ (kg)**
Construction Equipment Exhaust	553 (8%)	537 (37%)
Fugitive Dust	6,490 (92%)	924 (63%)

Source ADOT http://azdot.gov/docs/default-source/planning/2010-sti-adot-construction-study-final-report-10-25-10.pdf?sfvrsn=2

Documenting Greenhouse Gas Impacts

Currently there is not an approved policy or guidance to assist in evaluation the significance of a specific project for cumulative impacts. A qualitative discussion of GHG emissions associated with the project should be included in the air quality analysis including discussions on direct and indirect impacts until further guidance is developed.